SPH-16

SFP Patching Hub

- Converts 16 Fast Ethernet or Gigabit Ethernet copper ports to SFP sockets
- Supports any third-party standard SFP device
- Fully transparent Layer 1 wire-speed conversion eliminates store and forward delays
- Provides fault propagation to LAN link
- Supports SNMP management to interface with I^2C parameters of standard SFP devices

Converting Ethernet copper ports to SFP sockets

SPH-16 is a simple, smart and powerful patching hub that converts Ethernet copper ports to SFP sockets.

The device can connect to any RJ-45 compatible switch and supports RAD's System on an SFP family of products, MiRICi and MiTOP. It also supports standard SFP devices from any other vendor.

SPH-16 can also be used as an Ethernet copper-to-fiber converter, with various fiber optic media, to extend the distance of Fast Ethernet and Gigabit Ethernet networks.

The device supports hot-swappable SFPs working at 100 Mbps and 1000 Mbps, as well as Ethernet copper ports working at 100 Mbps and 1000 Mbps. It also supports hot-swappable AC and DC power supplies. Auto-discovery of Fast Ethernet (100 Mbps) or Gigabit Ethernet (1000 Mbps) is supported.

SPH-16 provides a flexible lower-cost alternative to being locked into purchasing expensive dedicated SFPs.

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FAULT PROPAGATION

If a failure is detected on the SFP port, the fault propagation mechanism deactivates the Ethernet copper port.

FLEXIBILITY

The SPH-16 ports can be used for any combination of 100 Mbps or 1000 Mbps fiber optic SFPs and the RAD products MiRICi and MiTOP.

MANAGEMENT

The unit can be managed via:

*   ASCII terminal, for configuration and status
*   PC running a WEB browser
*   Telnet host
*   SNMP-based network management station.

SECURITY

SPH-16 supports the following security protocols, to provide a high level of communication security:

*   SNMPv3
*   RADIUS authentication
*   SSL for Web-based management
*   SSH for Secure Shell communication.

DIAGNOSTICS

Comprehensive diagnostic capabilities include real-time major and minor alarms to alert the user to fault conditions.

POWER SUPPLY REDUNDANCY

SPH-16 offers the option of redundant power supplies, increasing reliability.

COMPACT SIZE

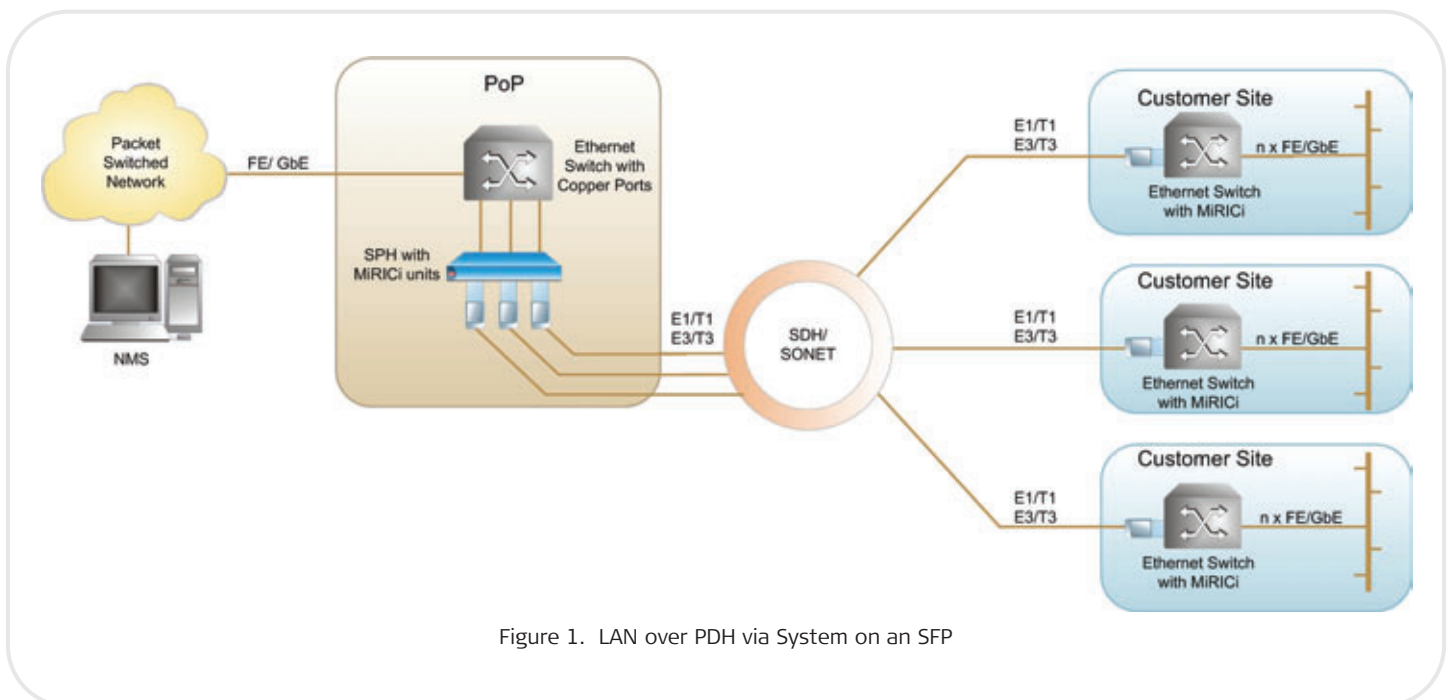The unit is supplied in a compact 19-inch 1U high enclosure.

Figure 1. LAN over PDH via System on an SFP

Specifications

ETHERNET USER INTERFACE

Number of Ports
16

Compliance
IEEE 802.3

Type
100/1000 Mbps, autonegotiation,
full-duplex, MDI/MDX crossover

Maximum Frame Size
10,000

Line Impedance
100Ω

Connector
RJ-45, shielded

SFP USER INTERFACE

Number of ports
16

Data rate
100/1000Mbps

Maximum Frame Size
10,000

Interface Type
Giga SERDES or 100BaseFX

Connector
SFP-based, MSA compliant

MANAGEMENT PORTS

Out-of-Band Ethernet Management Port
Compliance: IEEE 802.3
Type: 10/100 Mbps, MDI/MDX crossover
Maximum Frame Size: 1522
Connector: RJ-45, shielded

Control Port
Interface: RS-232 DCE
Connector: DB-9, female
Data rate: 9.6, 19.2, or 115.2 kbps

INDICATORS

Ethernet Copper User (per port)
LINK/ACT (yellow) – LAN link and data
activity status
  On: Ethernet link is up
  Off: Ethernet link is not up
  Flashing: Ethernet link is up and
    RX and/or TX frames are
    being transmitted

100/1000 (green) –100 or 1000 Mbps
  On: 1000 Mbps mode
  Off: 100 Mbps mode

SFP User (per port)
LINK/ACT (yellow) – Ethernet link integrity
and data activity status
  On: Ethernet link is up
  Off: Ethernet link is not up
  Flashing: Ethernet link is up and
    Rx and/or Tx frames are
    being transmitted

Ethernet Management
LINK/ACT (yellow) – LAN link and data
activity status
  On: Ethernet link is up
  Off: Ethernet link is not up
  Flashing: Ethernet link is up and
    RX and/or TX frames are
    being transmitted

10/100 (green) –10 Mbps or 100 Mbps
  On: 100 Mbps mode
  Off: 10 Mbps mode

GENERAL

Power
AC power supply:
  100–240 VAC ±10%, 50/60 Hz

DC power supply: 20–72 VDC

Power Consumption (fully occupied)
AC: 105 VA
DC: 70 W

Physical
Height: 43.7 mm (1.7 in) 1U
Width: 440 mm (17.3 in)
Depth: 182 mm (7.2 in)
Weight: 2.9 kg (6.4 lb)

Environment
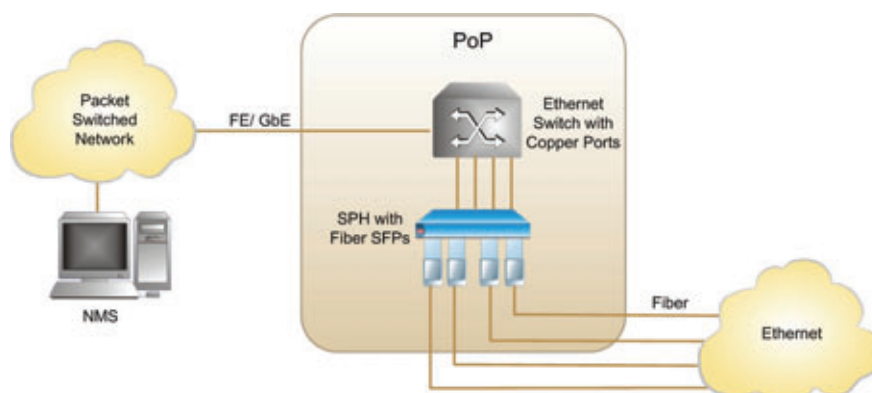Temperature: 0 –50°C (32–122°F)
Humidity: Up to 90%, non-condensing

Figure 2. Ethernet Copper to Fiber

Ordering

SPH-16/#/RM

Legend

Power supply:

AC	single 100 to 240 VAC
DC	single 20 to 72 VDC
ACR	dual 100 to 240 VAC
DCR	dual 20 to 72 VDC

RM Rack mounting equipment (Default=None):

CT   Cable tray with rack mount (19-inch non-ETSI)

SUPPLIED ACCESSORIES

AC power cord (with AC power supply only)

DC connection kit (with DC power supply only)

OPTIONAL ACCESSORIES

RM-43
Hardware kit for mounting one SPH-16 unit in an ETSI rack (including cable tray)

RM-43-19
Hardware kit for mounting one SPH-16 unit in a 19-inch non-ETSI rack (including cable tray)

RM-43-19-H1
Hardware kit for mounting one SPH-16 unit in a 19-inch non-ETSI rack

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